



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/996,294 | 11/28/2001 | Masaki Yamamoto | 9281-4222 | 4024 |

7590 06/07/2004

Brinks Hofer Gilson & Lione
P.O. Box 10395
Chicago, IL 60610

EXAMINER

TRAN, TRANG U

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2614

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/996,294

Applicant(s)

YAMAMOTO, MASAKI

Examiner

Trang U. Tran

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,3,9,10,16,19,20 and 22 is/are rejected.
- 7) ☒ Claim(s) 2, 4-8, 11-15, 17-18 and 21 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>2 and 4</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1, 3, 9-10, 16, 19-20 and 22 are rejected under 35 U.S.C. 102(a) as being anticipated by the admitted prior art (Fig. 5 discloses the specification of pages 1-6).

In considering claim 1, the admitted prior art (Fig. 5 discloses the specification of pages 1-6) discloses all the claimed subject matter, note 1) the claimed a television tuner comprising: a input terminal configured to receive a television signal in a VHF band or a UHF band is met by the input terminal 31 which a television signal in the VHF band or the UHF band is input (Fig. 5, page 1, lines 9-12), 2) the claimed a VHF tuner unit comprising a VHF tuning circuit coupled to said input terminal, and a first field-effect transistor (FET) configured to at least amplify a television signal in the VHF band is met by the VHF tuner circuit 40 and the first FET (dual-gate FET) 42 which functions as a high-frequency amplifier is provided (Fig. 5, page 1, lines 9-15), 3) the claimed a switching transistor configured to switch a bias voltage applied to an input terminal of said first FET is met by the switching transistor 35 which has the collector connected to the first gate or the FET 42 (Fig. 5, page 2, lines 19-26), 4) the claimed a UHF tuner unit configured to receive a television signal in the UHF band and coupled to said input terminal via a first switching diode is met by the UHF tuner circuit 50 and the input

terminal 31 is coupled to a UHF tuning circuit 51 of a UHF tuner unit 50 via a first **switching diode 33** (Fig. 5, page 1, lines 16-20), 5) the claimed wherein a predetermined voltage is applied to an anode said first switching diode, a power supply voltage is plied to a collector of said switching transistor via a power supply resistor and an emitter of said switching transistor is grounded is met by **the switching transistor 35** which has a power supply voltage B is applied to the collector of the switching transistor 35 via a **power supply resistor 36** and the emitter is grounded (Fig. 5, page 2, lines 6-26), 6) the claimed the collector of said switching transistor is connected to the input terminal of said first FET via a first resistor is met by the resistor 37 (Fig. 5, page 2, line 19 to page 3, line 2), and 7) the claimed said first switching diode and said switching transistor are both switched on or off pending on whether the television signal in the UHF band is to be received or the television signal in the VHF band is to be received, respectively is met by **the switching diode 33 and the switching transistor 35** are both switched on when the television signal in the UHF band to be received and both switched off when the television in the VHF band to be received (Fig. 5, page 3, line 25 to page 5, line 17).

In considering claim 3, the claimed wherein aid UHF tuner unit comprises a second FET configured to amplify the television signal in the UHF band, a peaking coil which tunes to a low band of the UHF band is provided between an input terminal of said second FET and the ground, high-level or low-level second switching voltage is plied to an input terminal of said second FET via said peaking coil dependent on whether a television signal in the UHF band is to be received or a television signal in the

Art Unit: 2614

VHF band is to be received, respectively, and said second switching voltage is applied to a base of said switching transistor is met by the FET 52 which has one end of a the peaking coil 52a is connected to the first gate of the FET 52, the other end of the peaking coil 52a is grounded for high frequencies, connected to the base of the switching transistor 35 and connected to the a second switching terminal 34b of the band switching circuit 34 (Fig. 5, page 3, line 3 to page 4, line 24).

In considering claim 9, the admitted prior art (Fig. 5 discloses the specification of pages 1-6) discloses all the claimed subject matter, note 1) the claimed a television tuner comprising: an input terminal configured to receive a television signal in a VHF band or a UHF band is met by the input terminal 31 which a television signal in the VHF band or the UHF band is input (Fig. 5, page 1, lines 9-12), 2) the claimed a VHF tuner unit having a VHF tuning circuit coupled the input terminal and a first amplification circuit configured to amplify a television signal in the VHF band is met by the VHF tuner circuit 40 and the first FET (dual-gate FET) 42 which functions as a high-frequency amplifier is provided (Fig. 5, page 1, lines 9-15), 3) the claimed a first switch having a terminal connected with an input terminal of the first amplification circuit through a first resistor, the first switch controlling a voltage applied to the input terminal of the first amplification circuit is met by **the switching transistor 35** which having a terminal connected with an input terminal of the first amplification circuit through a first resistor 37 (Fig. 5, page 2, line 19 to page 3, line 2), 4) the claimed a second resistor connected with the terminal of the first switch, a voltage applied to the terminal of the first switch through the second resistor is met by the switching transistor 35 which has a power supply voltage B is

Art Unit: 2614

applied to the collector of the switching transistor 35 via a **power supply resistor 36** and the emitter is grounded (Fig. 5, page 2, lines 6-26), 5) the claimed a UHF tuner unit configured to receive a television signal in the UHF band and coupled to the input terminal via second switch is met by the UHF tuner circuit 50 and the input terminal 31 is coupled to a UHF tuning circuit 51 of a UHF tuner unit 50 via a first **switching diode 33** (Fig. 5, page 1, lines 16-20), and 6) the claimed wherein the first and second switch are both switched on when the television signal in the UHF band is received and are both switched off when the television signal in the VHF band is received is met by **the switching diode 33 and the switching transistor 35** are both switched on when the television signal in the UHF band to be received and both switched off when the television in the VHF band to be received (Fig. 5, page 3, line 25 to page 5, line 17).

In considering claim 10, the claimed wherein the first switch grounds the input terminal of the first amplification circuit when on and permits a voltage other than ground to be applied to the input terminal of the first amplification circuit when off is met by when the switching transistor 35 is turned off, whereby a bias voltage is applied to the first gate of the first FET 42 via the power supply resistor 36 and when the switching transistor 35 is turned on, whereby a bias voltage is applied to the first gate of the first FET 42 becomes substantially 0 volts, deactivating the first FET 42 (Fig. 5, page 4, line 14 to page 5, line 17).

In considering claim 16, the claimed further comprising a band switching circuit that controls whether an output of the combination of the VHF tuner unit and the UHF

Art Unit: 2614

tuner unit is supplied by the VHF tuner unit or the UHF tuner unit is met by the band switching circuit 34 (Fig. 5, page 3, line 25 to page 4, line 13).

In considering claim 19, the admitted prior art (Fig. 5 discloses the specification of pages 1-6) discloses all the claimed subject matter, note 1) the claimed a television tuner comprising: a VHF tuner unit to receive a television signal in a VHF band, the VHF tuner unit having a VHF tuning circuit coupled to the input terminal and an amplification circuit amplify the television signal in the VHF band is met by the VHF tuner circuit 40 and the first FET (dual-gate FET) 42 which functions as a high-frequency amplifier is provided (Fig. 5, page 1, lines 9-15), 2) the claimed a UHF tuner unit to receive a television signal in a UHF band, the UHF tuner unit connected in parallel with the VHF tuner unit such that a television signal input to the combination of the VHF tuner unit and UHF tuner unit is output from only one of the combination of the VHF tuner unit and UHF tuner unit is met by the UHF tuner circuit 50 and the input terminal 31 is coupled to a UHF tuning circuit 51 of a UHF tuner unit 50 via a first **switching diode 33** (Fig. 5, page 1, lines 16-20), and 3) the claimed a first switch connected with the amplification circuit through a resistor and controlling a voltage applied to the amplification circuit., wherein a capacitance of the first switch is decoupled from the VHF tuning circuit **the switching transistor 35** which having a terminal connected with an input terminal of the first amplification circuit through a first resistor 37 and when the switching transistor 35 is turned on, whereby a bias voltage is applied to the first gate of the first FET 42 becomes substantially 0 volts, deactivating the first FET 42 (Fig. 5, page 2, line 19 to page 3, line 2 and page 4, line 14 to page 5, line 17).

In considering claim 20, the claimed wherein the VHF tuning circuit comprises a second switch that controls tuning of the VHF tuning to a high band or a low band of the VHF band dependent on whether the second switch is on or off, respectively is met by the switching diode 41g which is connected to a first switching terminal 34a of a band switching circuit 34 **via a resistor 41h**, and when the television signal in the VHF low band is to be received, the first switching terminal 34a goes to high level, **turning off the second switching diode 41g, whereby the VHF tuning circuit 41 tunes to the low band**, and when the television signal in the VHF high band is to be received, the first switching terminal 34a goes to low level, **turning on the second switching diode 41g**, thus, the inductors 41c and 41d becomes effectively absent in the VHF tuning circuit 41, **whereby the VHF tuning circuit 41 tunes to the high band** (Fig. 5, page 2, line 6 to page 3, line 2 and page 4, line 25 to page 5, line 6).

In considering claim 22, the claimed further comprising a third switch disposed between the first and second switch, the third switch being switched on when the first switch is switched on and being switching off when the first switched is off is met by the switching diode 33 which is disposed between the first switching transistor 35 and the second switching diode 41g; the switching diode 33 and the first switching transistor 35 are both switched on when the television signal in the UHF band to be received and both switched off when the television in the VHF band to be received (Fig. 5, page 3, line 25 to page 5, line 17).

Allowable Subject Matter

3. Claims 2, 4-8, 11-15, 17-18 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yamamoto et al. (US Patent No. 6,665,022 B1) disclose input circuitry of TV tuner.

Sato et al. (US Patent No. 6,392,715 B1) discloses UHF/VHF tuner.

Aoki et al. (US Patent No. 4,596,044) disclose UHF-VHF combination tuner.

Rinderle (US Patent No. 4,580,288) discloses receiver input circuit.

Hermeling, Jr. et al. (US Patent No. 4,499,602) disclose double conversion tuner for broadcast and cable television channels.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trang U. Tran whose telephone number is (703) 305-0090. The examiner can normally be reached on 8:00 AM - 5:30 PM, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on (703) 305-4795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2614

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TT
May 31, 2004


TRANG TRAN
PATENT EXAMINER